RESPONSE TO COMMENTS
SHELL SOLAR INDUSTRIES LP, VANCOUVER WA
PERMIT NO. ST 6129
REAUTHORIZATION, AUGUST 2003

This permit is due for renewal. After modification in March 2003, Ecology made the decision to reauthorize the permit, rather than renew. Reauthorization of a permit entails very little re-writing of the permit, as compared with a permit renewal, in which the permit and fact sheet are completely re-written. The basis for using the reauthorization option is explained in the document entitled "Addendum to the Fact Sheet for State Waste Discharge Permit No. ST 6129", which is attached to the proposed reauthorized permit.

No changes were made to the existing 2001 fact sheet during the modification or reauthorization. For modifications and reauthorizations, fact sheet are usually not updated directly. In the case of the modification, a Statement of Basis ("Statement of Basis for Modification of Permit No. ST 6129 Shell Solar Industries LP, Vancouver, WA. January 2003") was written. An addendum (referenced above) was written for the reauthorization, which describes the permit action, and becomes part of the fact sheet. The existing 2001 fact sheet was up-to-date in most aspects, as the basic description and operation had not changed significantly. The major deviation from the existing fact sheet information was changes in ownership and contact personnel.

During the public comment period, Mr. Sergio Vasquez, on behalf of Shell Solar Industries, submitted a letter containing corrections to the General Information table from page 1 of the Fact Sheet. As mentioned in the paragraph above, the fact sheet itself was intentionally not changed, but the addendum and Statement of Basis were added. However, Ecology recognizes that this does cause some confusion. After consideration, Ecology believes that the best solution, in this case, will be to include the updated ownership and contact information in an updated Addendum to the 2003 reauthorization. Therefore, the Addendum has been updated and the current company and contact information is included. The Addendum is an official part of this permit action.

A second set of comments was received from Mr. E. Alexander Fidis, representing Columbia Riverkeeper, the Washington Chapter of the Sierra Club, and the Northwest Environmental Defense Center. Although the 30 day time period had expired, Ecology allowed Mr. Fidis extra time to submit comments for consideration in this action. This four and one-half page letter will not be quoted or reproduced in this response, but is attached so the interested reader can refer to it.

Ecology Response to Question #1: Before granting Shells' requested flow increase, Ecology talked to Ecology's pretreatment permit manager for the Salmon Creek POTW and to POTW officials, and we reviewed the current capacities of the POTW. Based on this information, Ecology was comfortable with the request and had no reason to not grant the increased flow limits. Specific questions concerning flow limits and capacities of the Salmon Creek POTW is best referred to Ecology's permit manager for that facility: Glenn Pieritz at 360-407-6275.

Shell's discharge contains low solids, low BOD, and low toxics, if any. The increased flow limits will allow Shell to gradually increase production as demand increases, while putting minimal and gradual increase in flow and pollutant loading to the POTW. Therefore, the POTW should be able to adjust. Also, the effluent limits for Salmon Creek POTW have not changed due to this permit reauthorization for Shell. The POTW must meet existing permit limits, which take into account water quality conditions in the Columbia River. Currently, the Columbia River in the vicinity of the Salmon Creek POTW is on the 303(d) list for fecal coliform and temperature.

As an additional reminder, TTO is not typically monitored at Shell. As explained in the fact sheet, if Shell certifies in the monthly report that they do not use and expose wastewater to concentrated solvents, then the requirement to monitor TTO is waived. The reference for the authority to grant this federal monitoring exemption is listed in the fact sheet.

Ecology Response to Question #2: Salmon Creek POTW is responsible for meeting all conditions of their NPDES discharge permit, and Shell Solar is responsible for meeting all conditions of their State Pretreatment Discharge permit.

Salmon Creek POTW has substantial discretion to accept wastewater from a discharger. If the POTW refused to accept Shell's discharge, Shell could use an alternative disposal that met state, federal, and local requirements.

Ecology Response to Question #3: Antidegradation is a narrative standard of Washington's Water Quality Standards and applies to surface waters of the state, and thus is a consideration in direct discharge permits. This standard is generally not applied to pretreatment discharge permits.

Ecology Response to Question #4: Antibacksliding does not apply to pretreatment permits. Since this is an indirect discharger, Section 402(o) doesn't apply and 40 CFR 122.44(l) allows technology-based discharge increases if they are in accordance with the effluent guidelines. In this case, flow rates for this category of discharge is not limited by federal regulation.

Additional comment on questions 3 and 4: Ecology has requested further guidance from EPA on the applicability of anti-degradation and anti-backsliding provisions for pretreatment permits. As of August 4, 2003, a response has not been received.

Ecology Response to Question #5: The TSS limits were addressed in the 2001 permit renewal, not the 2003 modification or this reauthorization. This current permit action is simply to reauthorize the existing permit. State and federal regulations do not require TSS monitoring or limits for this discharger. In 2001, based on available information, Ecology decided that TSS monitoring and limits were not needed.

Ecology Response to Question #6: Shell uses sodium hypochlorite to control process water pH and to control biological growth in the system. Growth inhibition and pH control are critical for product quality control and discharged wastewater quality. Chlorine is highly reactive and is a strong oxidizer. As such, it reacts quickly with organic matter, such as is typically found in sewers. Because of the speed of these reactions and the relatively high amount of organic matter in sewers, all residual chlorine in Shell's discharge should be quickly consumed, long before reaching the POTW. Only a large chlorine spill could have any chance of reaching the treatment plant. Even in this highly unlikely scenario, any remaining chlorine would be lost to oxidation with organic matter long before it reached the biological treatment portion of the facility. Therefore, the probability that Shell's chlorinated wastewater currently has or could have any adverse effect on the Salmon Creek POTW is not very likely.

Ecology's Technical Resources for Engineering Efficiency (TREE) team has recently conducted an evaluation of Shell's processes and chemical usage, including sodium hypochlorite. The report is due soon. Any suggestions or comments in that report that relate to sodium hypochlorite or alternatives will be considered for further action via this permit, as appropriate.

Ecology Response to Question #7: Questions about POTW chlorine limits and monitoring are best referred directly to Ecology's permit manager for the POTW, Glenn Pieritz, at 360-407-6275. Also, any interested person may make an appointment to review the files for Shell Solar and Salmon Creek POTW at Ecology's Southwest Regional Office in Olympia.

Ecology Response to Question #'s 8 & 9: These questions refer to issues that occurred prior to issuance of the 2001 permit and were addressed in the 2001 fact sheet. These issues are not a direct part of this reauthorization nor directly related. Further information may be obtained by file review.

In general, permit violations are reported by permittees in the monthly reports, except for rare occasions where Ecology or other government agency collects and analyzes water samples. Monthly report submittals would not substantially alter compliance notification, since the permit requires permittees to immediately notify Ecology of any non-compliance (Condition S3.E).

Ecology Response to Question #10: This question also refers to decisions that were made during the 2001 permit renewal, and are not a direct part of this permit action. Also, please refer to the response to question #1, second paragraph.

Ecology would like to thank both parties for the comments submitted.

E. ALEXANDER FIDIS COMMENTS

I am writing on behalf of Columbia Riverkeeper, the Washington Chapter of the Sierra Club, and the Northwest Environmental Defense Center to comment on the proposed renewal of State Waste Discharge Permit number ST 6129, for Shell Solar Industries, LP (formerly Siemens Solar Industries). We have a number of concerns with the Facilities pretreatment of waste, disposal to the Salmon Creek Publicly Owned Wastewater Treatment Facility, and final discharge of processed wastewater into the Columbia River. We appreciate your help and attention in allowing the submission of our comments.

Solar power provides a clean and plentiful source of energy, and is perhaps one of the most viable alternatives to dependency on non-renewable energy sources. We recognize the importance of solar panel manufacturing to support and further this positive development for our energy future. These comments are in no way intended to detract from the importance of manufacturing solar panels for continued and expanded use. However, while solar energy is clean, the production of silicon ingots requires an industrial process that raises environmental and public health concerns. We write to urge Ecology that implement all available measures to reduce the harmful wastes associated with this manufacturing process.

We are particularly concerned with Shell Solar's pretreatment discharge and Salmon Creeks point source discharge into the water quality limited Columbia River. As you are aware, the Columbia River is listed on Washington, Oregon, and EPA's 303(d) lists for a number of parameters. Any permitted discharge, whether from a pretreatment facility or NPDES permittee, contributing to further water quality degradation of the Columbia River must not be allowed. We appreciate Ecology's efforts to preserve the integrity and health of the Columbia River, and encourage Ecology to continue in this direction.

Increased Flow Limits

A primary concern with the proposed renewal permit is the dramatic increase in allowable flow limit resulting from the March 2003 permit modification. This modification nearly doubles the maximum daily and monthly average flows, from 45,000 gallons to 80,000 gallons and 55,000 gallons to 100,000 gallons, respectively. Ecology modified the existing Washington State Waste Discharge Permit, incorporating this dramatic increase, upon Shell Solar's request. While the need to increase production and realize profits is important, so is the need to restore and maintain the chemical, physical, and biological integrity of our waterways. 33 U.S.C. §1251(a). The modification increasing the volume of wastewater discharge, will directly correspond to an equivalent increase in the discharge of pollutants to Salmon Creek POTW. Since there is no indication that the concentration of pollutants in the effluent will decrease, doubling effluent flow will similarly double the amount of pollutants carried to the POTW.

Question #1) Does Ecology have an data demonstrating that Salmon Creek POTW will be able to assimilate this increase in effluent without violating its current NPDES permit? Will Salmon Creek be able to assimilate an increase in maximum daily allowable TTO mass from 285.57 grains per day to 5 19.23 grains per day?

Question #2) Should Shell Solar's increased flow to Salmon Creek POTW cause a violation of any parameter in the POTW's NPDES permit, how will this violation be handled? Could Salmon Creek refuse to accept Shell Solar's discharges? If so, what alternatives would be available for Shell Solar's effluent disposal?

Imposition of Less Stringent Permit Requirements

The federal government and the state of Washington apply antidegradation policies to NPDES permits. See 40 C.F.R. 122; WAC 173-201A-070. These antidegradation policies would prohibit an NPDES permittee from increasing the volume of effluent discharge, if this increase in volume would further degrade the receiving waterbody's existing beneficial uses. The Washington Administrative Code appears to exempt pretreatment facilities from NPDES permit requirements. WAC 173-216-050(b). However, the WAC does not specifically address whether pretreatment facilities are exempted from state and federal antidegradation policies.

Question #3) Are pretreatment facilities issued state waste discharge permits, exempt from state and federal antidegradation policies?

When Congress promulgated the Clean Water Act (CWA), it prohibited the issuance of a permit containing effluent limitations which are less stringent than the comparable effluent limitations in the previous permit. In the case of effluent limitations established on the basis of section 1311(b)(1)(C) or section 1313(d) or (e) of this title, a permit may not be renewed, reissued, or modified to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit except in compliance with section 1313(d)(4) of this title." 33 U.S.C. §1342(o).

Although this section of the CWA falls under the umbrella of NPDES permitting, the reference in §1342(o) to § 1311 (b)(1)(C) appears to include this antibacksliding provision for effluent limits in state issued permits. Neither the antibacksliding requirements of § 1342(o), or the state permitting authority of § 1311 (b), specifically exclude pretreatment facilities from federally mandated antibacksliding provisions.

Question #4) Are pretreatment facilities specifically excluded from the federal antibacksliding permit provisions? If yes, what specific federal law addresses this exclusion?

Applying antibacksliding to Shell Solar's proposed permit, it violates this federal provision in two instances. First the dramatic increase in flow is a less stringent permit requirement than the previous permit. Secondly, the previous permit established an effluent limitation for Total Suspended Solids (TSS) at 50 mg/L. In the proposed permit, this effluent limitation has been eliminated and there is currently no proposed effluent limit for TSS.

Question #5) What justification does, Ecology offer for eliminating an effluent limitation for TSS?

Regardless of whether antidegradation or antibacksliding provisions apply to pretreatment facilities, allowing an increased flow that will send larger volumes of wastewater and pollutants to Salmon Creek POTW, will further strain a treatment process already receiving pretreatment wastewater from numerous industrial facilities.

Chlorine

Salmon Creek POTW utilizes a secondary process, including LJV disinfection, to treat waste. For many POTWs utilizing UV disinfection, effluent chlorine limits are not established due to a perceived lack of necessity to monitor this parameter. During Shell Solar's silicon cutting and grinding process, it adds sodium hypochlorite to control biological growth. The wastewater from this process is then clarified and either recycled or discharged to Salmon Creek POTW. The Laminar Plate Clarifier would remove excess

silicon solids, but there is no indication that the treatment process removes the added sodium hypochlorite.

Question #6) Does the pretreatment of wastewater from Shell Solar's silicon cutting and grinding process remove the added sodium hypochlorite solution?

If the sodium hypochlorite solution is not removed in the clarifier, the assumption is that the wastewater is either recycled for reuse or discharged to Salmon Creek POTW. This is potentially problematic should Salmon Creek's NPDES permit not contain any chlorine effluent limits, as a result of its UV disinfection process. If no chlorine limits for Salmon Creek are present, the presumption is that Shell Solar's added sodium hypochlorite solution flows unchecked into the Columbia River.

Question #7) Does the current NPDES permit for Salmon Creek POTW contain an effluent limit for chlorine? If yes, does Ecology anticipate that Salmon Creek POTW will have difficulty achieving chlorine permit limits due to the increased volume of effluent discharged from Shell Solar. If no, how does Ecology intend to address Shell Solar's unchecked use of sodium hypochlorite?

If there are no effluent chlorine permit limits for Salmon Creek, and Shell Solar does not incorporate a process that substantially removes the added sodium hypochlorite, we recommend Ecology revise the proposed permit to include effluent chlorine limits and monitoring requirements.

pH Violations

In the Summary of Compliance section of the fact sheet, it is noted that wastewater discharged to Salmon Creek POTW did not always comply with pH limitations, but that these violations were not reflected in the quarterly DMR submittals. The fact sheet further implies that pH violations were detected by the Hazel Dell Sewage District, and not the Department of Ecology or Shell Solar.

Question #9) How did Ecology determine pH level were violated? Were any notices of noncompliance issued to Shell Solar?

Although Shell Solar has since implemented continuous and automatic pH monitoring, Ecology's inability to detect the pH violations, provide compelling justification for requiring monthly DMR submittals.

Question #9) In light of the inability to detect pH violations, why has Ecology maintained quarterly DMR submittals? Does Ecology agree that requiring monthly DMR submittals would enable more efficient and effective identification of permit problems and violations?

Monitoring Requirements

The previous and proposed permits require Shell Solar to monitor TTO on a quarterly schedule. Since TTO is the pollutant parameter most likely to impact employee health and impair the ability of Salmon Creek POTW to effectively meet the requirements of its NPDES permit, this parameter should be strictly monitored. Once Shell Solar's effluent is enters Hazel Dell Sewage District, it will be more difficult to determine the impacts of Shell Solar's effluent on Salmon Creek POTWs ability to satisfactorily treat wastewater as required by their NPDES permit. For this reason, Shell Solar should be required to monitor TTO in its effluent with greater frequency, before its discharge to Hazel Dell Sewage District. Increased monitoring will provide better data and may help address potential problems at Salmon Creek POTW with greater efficiency. Increasing the frequency of TTO monitoring requirements is even more

compelling when considering the permit modification allowing a dramatic increase in allowable flow and overall mass of TTO. We urge Ecology to require Shell Solar to monitor TTO more frequently than on a quarterly basis. We recommend Ecology require Shell Solar to submit a monthly DMR and include a daily or weekly monitoring requirement for TTO. This would facilitate adequate capture of statistics revealing the potential effects that increased flow and the subsequent increase in mass of TTO, will have on Salmon Creek POTW and its discharge into the Columbia River.

Question #10) On what basis did Ecology determine the quarterly monitoring requirement for TTO? Does Ecology anticipate that only 4 samples per year will provide the data necessary to determine substantial compliance with the TTO limitations?

Conclusion

The reasons described above are only some of our concerns about the proposed permit. Shell Solar, as a pretreatment facility, is generally subject to less stringent discharge regulations, which are instead passed on to Salmon Creek, Publicly Owned Treatment Works. We urge Ecology to make the modifications needed to ensure that any permit renewal issued incorporates all provisions necessary for effective treatment of Shell Solar's wastewater. If you have any questions about these comments please feel free to contact me at (503) 892-1861.

SHELL COMMENTS

Thank you for moving our permit request forward. We appreciate all of the help your department has given us in updating and upgrading our industrial wastewater permit. Per your request, I review the information and found all of the technical items correct. But I did find some errors, which need to be corrected on page 1 of the FACT SHEET FOR STATE WASTE DISCHARGE PERMIT NO. ST6129:

- On the header, the Company Name should be Shell Solar Industries LP
- The applicant is again, Shell Solar Industries LP
- Facility Name, Shell Solar Industries LP
- Contact at Facility, Greg Mihalik is the new Plant Manager. His phone number is 360-955-7275
- Responsible Official, Mike Miskus the new Facility Manager. His phone number is 805-388-6252, fax number is 805-388-6557. The address also needs to have the correct name (Shell Solar Industries LP)

Otherwise all other information seems to be correct. I've attached a copy of the fact sheet indicating where the corrections are needed. Please let me know if you need any other information or assistance.